Algebra III Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Applications of Logs HW Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve for x.

1.  2.  3.  4. 

5.  6.  7.  8. 

Solve each problem. (SHOW ALL WORK!!)

9. After 9 years, half of a 20 milligram sample of a radioactive element is left. Find *k* for this element.

10. For a certain strain of bacteria, *k* is 0.783 when *t* is measured in hours. How long will it take 10 bacteria to increase to 100 bacteria?

11. Rachel has saved $2000 to buy a piano that will cost about $2500. If the money is in a savings account paying 7.25% interest compounded continuously, when will she be able to buy the piano?

12. Suppose $10 is invested at 8% interest compounded continuously. When will the investment be worth $100? Worth $1000?

13. Citizen’s Bank promises to double your money in 8.5 years. Assuming continuous compounding of interest, what rate of interest must the bank pay?

14. A radioactive substance decays according to the equation , where *t* is in hours. Find the half life of the substance, when 

15. The output in watts of a satellite’s power supply is given by , where *t* is the time in days. In how many days will the power output be reduced to 20 watts?

16. Suppose $2500 is invested at 6% interest compounded quarterly. How long will it take for the amount to triple?

17. If Joe invests $2000 at 12% interest compounded monthly, will he have at least $3000 in two years?

Algebra III Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Applications of Logs HW Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve for x.

1.  2.  3.  4. 

5.  6.  7.  8. 

Solve each problem. (SHOW ALL WORK!!)

9. After 9 years, half of a 20 milligram sample of a radioactive element is left. Find *k* for this element.

10. For a certain strain of bacteria, *k* is 0.783 when *t* is measured in hours. How long will it take 10 bacteria to increase to 100 bacteria?

11. Rachel has saved $2000 to buy a piano that will cost about $2500. If the money is in a savings account paying 7.25% interest compounded continuously, when will she be able to buy the piano?

12. Suppose $10 is invested at 8% interest compounded continuously. When will the investment be worth $100? Worth $1000?

13. Citizen’s Bank promises to double your money in 8.5 years. Assuming continuous compounding of interest, what rate of interest must the bank pay?

14. A radioactive substance decays according to the equation , where *t* is in hours. Find the half life of the substance, when 

15. The output in watts of a satellite’s power supply is given by , where *t* is the time in days. In how many days will the power output be reduced to 20 watts?

16. Suppose $2500 is invested at 6% interest compounded quarterly. How long will it take for the amount to triple?

17. If Joe invests $2000 at 12% interest compounded monthly, will he have at least $3000 in two years?